The Southerner.

No. 14.—Vol. 1. Tarboro', Edgecombe County, (N. C.) Saturday, April 3, 1852. Whole No. 14.

THE SOUTHERNER,
GEO. HOWARD, Jr., Editor & Proprietor.

TERMS—PER ANNUM.

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☞ *"Agriculture is the chief foundation of a nation's power, as it not only furnishes man with food and clothing, but also with materials for the mechanic arts and commerce."*

From the Raleigh Star.

Agricultural improvement in Edgecombe,

INTERESTING TO FARMERS.

We are permitted to make the following interesting extract of a letter from Jesse H. Powell, Esq., of Edgecombe county, to Maj. Charles L. Hinton, of Wake county, dated

Battleboro', Edgecombe co., March 12, 1852.

Having a little leisure, and believing that you and others in the upper counties are too much disposed to attribute the improvement in farming in this county, now in its infancy, to Marl, and in order to show that kind Nature has put in your reach the materials of improvement in abundance, I am induced to make some remarks. A portion of this county (Town Creek) which has, I believe, the best practical farmers in the State, and who realize the largest profits, is almost destitute of Marl—but one farmer in that region having used it at all, and he only during the past year. A great deal of this Land, formerly quite poor, is now producing 1200lbs seed cotton to the acre, and one farmer has averaged over a bale (400lbs) to the acre—his crop, seventy odd bags. Swamp mud, fence scrapings, ditch bank, ashes, stable manure, and their surplus cotton seed, are the materials used.

"Having committed some errors and improved by experience, though only a medium farmer, permit me to submit my present plans of operation in improvement, not doubting that you carry it much further. The land intended to be manured is first staked off seventy yards apart, which puts it in acre lots. In the centre of this I begin my heap; if the land is very poor, and the larger portion is of this kind, I first put down 20 loads of Muck in a circular form of 15 or 18 feet in diameter, which is made level with the hoe, on which is put (measured) 8 or 10 bushels of cotton seed, and spread regularly over. I now put on 17 or 18 loads more of Muck (diminishing the number of loads as I raise the heap) which is followed by 12 or 15 bushels stable manure—continuing in this way until the heap is finished, generally having two layers of seed and two of manure—the whole to be cap'd off with 10 or 12 bushels unleached ashes. The whole pile, when finished, is not more than 30 or 36 inches high. The advantage in having the pile so large for the height is in order to drive up the mules on the heap and spur out, thereby saving much labor. I prefer putting in several kinds of manure in the heap. The one containing fertilizing properties that the other does not. The size of heaps is made to contain just the number of loads intended for an acre. Some of the heaps are made entirely of ditch bank and ashes, the proportion about 10 or 12 bushels ashes to 20 loads ditch bank.

"My carts are made to hold, when heaped, about 6 bushels. This prevents overloading and renders the application on land more regular. If I wish to use manure on corn, the shovel full that are required to fill the cart are carefully counted, and the load dropped accordingly—shovel full to the hill, on the grain of corn. This will work out exactly, neither too much nor too little.

"The improvement now going on in this county, is greater than ever seen before. The increased quantity of manure is supposed to be double that of last year. Thorough draining is certain to follow this system. Old ditches must be cut deeper in order to furnish material for the compost heaps, and new ones cut from the same cause.

"I raised last year 3000 loads manure, this season over 5000, and am now convinced, by beginning my operations as soon as the present crop is laid by, I can with more ease put up 10,000—I have reserved some cotton seed to begin with, and shall reserve all the manure raised from 1st April until August. The rafts that have formed in my low grounds, together with dead trees, will be converted into ashes. This last article I am careful to use immediately after the fire is out. Manure put up so long before it is used and exposed to the weather, will require a small portion of charcoal (powdered) or plaster applied to prevent the volatile property from escaping. I am at this time breaking my compost heaps and hauling on the land. A man will load and drive and carry out 75 loads a day.

"I believe we living in the cotton region, should set aside an improving force, to be constantly devoted to that branch of business. Under our present system there is too much work crowded in the first three months of the year; consequently, it is not done (ploughing particularly) as well as it should be.

"Other changes besides improvement in the lands have taken place: emigration has ceased to flow from our county, not a single instance can I now remember of any persons having moved from here in two years; a degree of health which was never known before; and a perceptible improvement in the *Morals* of the community. What has caused this?

"I see with pleasure your county is roused upon the subject of improvement. You have but to go on for a year or two, and there will be no stopping it. Men do not recede from their interest. We are but a step or two ahead of you. In less than ten years (mark the prediction!) your best farmers will be raising their bag of cotton to the acre; for you have some advantages over us—a city in the centre of your county, furnishing a large quantity of manure—your population greatly increased, together with every evidence of wealth, prosperity and happiness. Very respectfully yours,

JESSE H. POWELL."

The following memorandum accompanies the letter. It shows the progress of improvement on Mr. Bulluck's farm during three years. The last year, it will be seen, the product nearly doubles that of the first! Will any farmer still be so stupid as to say "there is no advantage to be gained by reading"—"no good in book farming"—that "agricultural societies are useless institutions—humbugs?" Why, these very means have led Mr. Bulluck to make enough in a single crop for a small capital to begin life with. Farmers, arouse! and read! and think! and work! A brighter day is dawning.

MEMORANDUM.

"18 to 20 hands—3 men—the balance women and children.

1849	1850	1851
50 bales.	61 bales.	98 bales.

D. W. BULLUCK."

From the Alabama Beacon.

Rotation of Crops, &c.

COL. I. CROOM—*Dear Sir:*—At your request I have written out hastily and send you, the subjoined brief account of my experiments and the system of plantation economy which I practice.

It may not be amiss that I premise by the remark, that I was raised till 21 a practical plowman. A short time after my return from Philadelphia, and during the rounds of my engagements in the practice of medicine, I became deeply impressed with the important fact, which I believed I then saw, that we, the cotton planters of the Southern States of this Union, were destined to furnish the cotton, which civilization in its rapid marches was rendering necessary to clothe the hundreds of millions of the inhabitants of the earth. We all believe, I think, that there is a day in the future, that if to bring peace and good will to all men—and when that day arrives every man, woman and child will require a *cotton shirt!* and it is very evident to any person at all, who may or has given the subject any attention, that we are to be the producers of that abundant amount of cotton. In view of this state of things, to me entirely clear, I beheld my immediate friends, and the cotton planters of the country generally, year after year, pursuing a most injudicious policy, in their agricultural practice,—and I commenced in 1840, laying my plans for a radically improved plan of plantation economy, and the result has been, to me, entirely satisfactory,—as the present condition of my farm most triumphantly demonstrates.

I set out with these cardinal facts in view—first, that the true and legitimate object of agriculture is to improve the condition of the soil, together with that of every thing else, both animal and inanimate, connected thereto. 2d., to render cotton planting profitable beyond contingencies, it is necessary to adopt such system of policy as will enable the planter to grow profitably every *needful* supply that the soil and climate afford.

To accomplish this, then, I have my farm laid out into four equal apartments,—one-fourth for cotton, at the rate of five acres to the hand; one-fourth for corn, at the same rate per hand; one-fourth for small grain, at the same rate; and one-fourth to lie in fallow, at the same rate per hand. The philosophy and advantages of this systematic rotation and four years shift, I shall endeavor to explain briefly in the sequel.

We commence first with the quarter that is to be planted in cotton, upon the supposition that it lay last year in fallow. We haul on it 500 bushels of manure, stock yard compost, per acre, in carts graduated to 17, &c., bushels, and deposited in heaps of 8½ bushels each, at distances of 20 by 25 feet,—that is, drop the heaps in rows 30 feet from one heap to the other and put the rows of heaps 25 feet apart. This done the land is laid off in five feet rows, and the spreading of the manure commences, which should be done equally and uniformly over all the surface alike, and the plows follow immediately, putting up the beds, that there may be no loss from evaporation or a sudden fall of rain. I need hardly tell you, that this work-*plowing*, should be done by good plow, men and *first rate* plows. The manure should be hauled out as soon after the first of January as convenient, that it may be spread and the land bedded out before time to plant corn, and though I desire this work done before I commence planting corn, it is not that I desire to plant corn in the *winter*—but I want time, that when I commence I may be prepared to plant it well—which having done, (about the process I will speak presently.) If we have time, till the 10th April, we reverse our first cotton ridges—and there is a great advantage in this, as it serves to commingle the manure more intimately with the soil. The 10th of April we commence planting, by running a drill upon the ridge, that smoothes it and leaves it in a perfectly oval condition, making an impression for the cotton row, by a cog for the purpose; after which a hand follows, with a spacer, in the form of a compass 24 by 38, or 36 inches from point to point, as the condition of your land may require, thus he spaces or fixes the hills *perfectly* in the row—and he is followed by another hand, with the cotton seed rolled in *ashes, guano, lime,* or *plaster,* and drops 6 to 10 seed in a place, designated by the point of the spacer, and then *simply treads on them,* which is the simple operation of planting in hills, as I do it. At the time to commence work in the cotton, we begin by flat weeding first, and trim out each hill to three or four stalks, which is followed directly by a scooter plow running as close as possible, and then plowing out the middles with a shovel plow, or if your beds require raising, a light turn plow, this, however, is rarely necessary on upland. And the balance of the work is done, as required from time to time with a *flat sweep,* and simply weeding with the hoe. I do not esteem it good policy to thin to a stand, *one stalk in a place,* too soon. This is the simple operation by which two to three bales of cotton may be grown to the acre; and these results, let me assure you, will be far more common on any of our land now in cotton 50 years hence, than 500 lbs. now is to the acre.

The next crop is the corn, which follows the cotton—and here we vary the rule in practice, but not in *point of principle*—corn being an article of permanent importance on a cotton plantation; we plant the cotton land (that was in cotton last year) to corn, at the same rate of 5 acres per hand—and 2½ acres for each hand from the land that was in corn last year, making in all 7½ acres of corn per hand, which you will observe, instead of leaving for the third year's shift 5 acres per hand in small grain, we have but 3—which gives an abundance of oats, rye, &c., for all practical purposes, and the land is quite as much benefitted by the corn and peas as by the small grain, hence in effect the shift is the same, while the quantity and value of the grain or crop is increased and the pasturage improved.

We plant corn after cotton, either by running off the row in the old water furrow or in the old cotton ridge, according to the locality of the up or low land—and I am not so certain but it is best to plant all land in the old ridge, by first opening it well. We manure our corn in the hill with our cotton seed. As soon as we are done planting cotton, we commence work in our corn. We plow our corn *but once.* We first run it with a scooter plow and weed and thin it out to a stand—then after working over our cotton first time, we return and plow out the middles of our corn *deep* and thoroughly—then, at or about the first of June we run twice in each row with a *side harrow,* after having first sowed peas broad-cast, a half bushel per acre, and the hoe hands follow and put up a light hill to the corn, kill the small grass and weeds and cover the peas immediately in the corn row, that the harrow could not reach, and thus we *lay by* the corn. And we make, in this simple but effectual way, corn that never *fires,* even the past dry season.

In the fall & winter after the fields are eaten out by the stock, we prepare and sow our small grain—oats, rye, wheat, &c.—harrowing and preparing for hay—which seeds down the land, with the 2 acres per hand reserved for corn, for the third year's shift. The land that was the third year in grain, and 2 acres per hand of the corn land lies during the fourth year in fallow, to be sowed in peas, or whatever we may see fit to put on it, for a fallow crop, for green swarding—which fits it again for our heavy manuring for cotton.

The practicability of this system is no longer a question. Its superiority as a perfect system of plantation economy, answerable fully to every desirable object, cannot be successfully controverted. I have practised it for 10 years with entire satisfaction to myself—upon common pine land, which 12 years ago was rejected at 50 cents per acre, that is now worth to me $100 per acre—and will, I doubt not, by 1860 produce me $100 per acre per annum! You have my word for this—but I will give you the why and the wherefore, and then judge ye. In the first place, the least observant has not failed to notice, how finely our lands [good cotton land,] grow cotton while fresh, and contain an abundant supply of vegetable mould, [or humus.] Has it not occurred to all of us, how desirable it would be to have that state of things continued? I have it not only continued, but annually improving! I grow the same land in cotton but once in 4 years, and pursue such system of rotation and shift of crops as to furnish the greatest amount possible of vegetable matter—and then 590 bushels compost per acre, when the land is planted to cotton. And I have my land graded to a perfect level, hence no loss—but a gain from every shower. A moment's reflection will not only teach any man, that this system will answer to keep up and *improve* our maiden soils in this western country—but it will resuscitate those *red hills, gullied* and *bleaching, naked* to the sun, that we saw in Georgia. Then look to its superior advantages in affording rich pasturage for stock. The ¼ lying in fallow may be in pasturage all the time—then at harvest you have all grain fields in pasturage—and in September your corn and pea fields come in one by one as the needs of the stock require. The stock of all kinds graze on these pastures through the day, and return at night *laden and full* to their respective lots, to aid in treading up the litter and deposite their excrements, which *composts its manure.* And you are quickly astonished under this system, that you have nothing to buy—bacon, mules, grain, rich milk and butter, nor any thing else—all grow spontaneously—a perfect independency. The manure or stock lots are matters of the first importance, these are the *gold mines* of the planter; and they should be judiciously located and fixed permanently—each variety to themselves, and the lots regularly and well littered with pine straw or oak leaves and other litter from the forest, with all the straw from your grain. Respectfully, your friend,

DR. CLOUD.

P. S.—I have much more that I might say profitably, but I fear you are wearied.

La Place, Macon Co., Ala., Nov. 13*th,* 1851.

From the Cheraw Gazette.

Guano.

FAIRY HILL, near Cheraw, S. C. 20th February, 1852.

My Dear Sir: Your desire me to write out some account of an experiment with Guano made by me the past season, with such suggestions as might be serviceable to you in conducting a similar one upon the ensuing crop. My acquaintance with this article, as you are aware, is too limited to enable me to prescribe with certainty the best rules for its application and management; but as far as my experience extends, it affords me pleasure to furnish you with such facts as have come under my observation, leaving you to make such deductions therefrom as to you may seem reasonable and legitimate.

I used a small quantity of Guano (Peruvian) last spring for the first time. To satisfy myself of its value, I applied it alone and in combination, to almost every production both of the field and garden, and to different descriptions of soil; and each application was followed by such marked effects as to fully meet my expectations. But in one instance only did I give that attention to the details that would justify my reporting it as a well conducted experiment. The piece of land selected was the central portion of a field situated on the river ridge, of light, sandy soil, (known as isinglass or micalands) and of nearly uniform fertility. The time of application was at the first plowing of the corn, and the manner was as follows:

A narrow shovel plow was run round the corn as closely and deeply as practicable, and in this furrow track, a level table spoonful of Guano was deposited opposite each hill. The hands engaged in this operation were provided with a charger of uniform capacity, and were directed in depositing it to scatter it 6 or 8 inches in the furrow, but to suffer none to fall out of it. To three rows it was applied as above described, and to three contiguous ones the same quantity of a mixture, composed of 3 parts in bulk of Guano to 1 of Plaster: and thus alternating throughout (first G. then the mixture) the whole plat was manured. A turn plow followed immediately, which covered it so deeply as not to be disturbed in after culture. On either side of this plat a few rows were left without manure, and the balance was cotton-seeded at the rate of 20 bushels to the acre. The quantity of Guano used above, when alone, was 55 lbs. and when in combination with Plaster, 41lbs. to the acre. And as a "tablespoonful" does not convey a very accurate idea of quantity, it may not be improper to state that the capacity of the one used by me was about ½ ounce. The whole field received the same culture.

In a few weeks after the application, the weather being seasonable, the most striking effects were observable; the corn, where the Guano and mixture were used, assumed that *dark green* color peculiar to the best bottom lands, and soon over-topped any other portion of the field. It continued to grow finely, and promised a very largely increased yield until about earing time, when it suffered so seriously from drouth that I was induced to believe that the manures were to a great extent, if not entirely lost. To satisfy myself, however, beyond a doubt, I took two hands into the field about the last of November and gathered a number of contiguous rows as treated above, weighing (weight being more accurate than measurement) each row separately, and the result was as follows:—Guano alone at a cost of $1 65 per acre (55 lbs at 3 cents per lb) as compared with the unmanured portion increased it 5 bushels per acre. This result was uniform in a number of comparisons. The cotton-seed gave a better yield than the Guano alone; but when compared with mixture the result was variant; in one instance the cotton-seed had the advantage,—in another the mixture; the difference being so small in each trial as to leave me in doubt to which of the two a preference should be given. When however, the relative cost of the two applications ($1-33 and $2 00) are considered, it would not seem unreasonable to infer that Guano when thus combined, is at least as cheap at 3 cents per pound as cotton seed at 10 cents per bushel.

From the above experiment it would appear that Guano, when used alone, will not repay the planter the cost of its application when corn commands less than 55 cents per bushel; but when combined as above it may be profitably employed every where in the cotton States, as corn can be grown with it for a small fraction over 22 cents per bushel, a sum much below the average price of this article. It was with this last result that I was most highly pleased, as it obviates to some considerable extent the only valid objection to its use—its market value—for Plaster costing but a trifle, not only *cheapens* the manure but adds greatly to its efficiency.

That Guano is a powerful fertilizer is beyond a doubt; but whether it is adapted to our soil and productions, and if so, whether the high price at which it sells, will admit of its profitable employment as a means for renovating our lands, are questions of importance to the planting community. It is not pretended that the small trial above, by any means, determines these important questions, for in agricultural matters especially, where there are so many circumstances to be considered, ever varying and each tending to change or modify the result by one experiment however carefully conducted, can certainly establish a single fact. All that can be claimed for it, therefore, is, that it raises a probability in its favor, sufficiently strong to warrant further and more extended experiments. Accordingly, I have procured and intend using the present year more largely of these articles; and in lieu of the suggestions you desire me to make, I will give you, as far as my space will allow, some idea of the manner in which I intend applying it.

On cotton land I shall use from 150 to 200 lbs. per acre; deposite it in drill as is usual with other manures, alone and in combination. Before using it, however, all the lumps should be carefully reduced so that the whole may be passed through a sieve, and to secure regularity in spreading it, it has been found advatageous to combine it with other manures. Vegetable mould, saw dust, and charcoal, are recommended to be suitable substances with which to compost it; but the latter, however, is perhaps to be prefered to all others, as it is a good absorbent, deprives Guano of its unpleasant odor, and is of itself on some soils a good manure. Whatever the substance may be that is to be used in combination with it, it should be perfectly dry; or if wet, the composts should be buried as early as possible, as moisture produces immediate decomposition and thereby disengages those gasses which constitute its chief value. For this among other reasons, it is not deemed judicious to compost it with stable or barnyard manure. I intend combining it with Plaster in the proportion of about 25 per cent. in bulk of the latter, which would not vary far from 50 per cent in weight; with charcoal (the quantity depending on the amount at command) and also with common salt in minute quantity.

Another way in which I intended using it on cotton, is to make a solution of it in about the following proportions: to every pound of Guano, add 10 gallons of water. Small as this quantity seems, I am induced to believe from a small trial which I made last year, nearly similar to this, that it would prove to be highly beneficial in imparting an early and vigorous growth to the young plant. This steep should be applied to seed immediately before planting, and whilst wet with it, they should be to 25 or 30 of seed, is about the quantity which the lint will take up.

On corn I intended using ½ ounce to the hill; depositing it near the grain—but not in immediate contact with it as from its highly caustic nature it would doubtless destroy it—and as deeply as practicable. The steep mentioned above might be used on this also with advantage, not only in hastening the germination, but in rendering it unpalatable to crows. This steep tastes no better than it smells, and as soon as they find that out they will quit the field. They are sensible birds; and here is the proof of it:—A farmer being greatly annoyed by them, soaked corn in spirits, and exposed it where they frequented: they ate, got tight and [as a matter of course] made a mighty fuss! He renewed his bait, but could never deceive them afterwards. A crow never gets drunk a second time.

The only danger to be apprehended of a failure in the use of Guano is from a drouth; hence the advantage of combining it with such substances as are good absorbents or that possess strong affinity for water; and hence, too, the propriety of depositing it deeply, and as early in the spring as practicable. One great advantage which it possesses over all other manures, is that its strength is concentrated in so small a compass as to make the labor of taking it to the farm and depositing it, comparatively trifling. All the manures used by us